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His preparations of the diseased tissue show fairly large irregularly shaped corpuscles and very small granules, both clearly foreign elements, being entirely absent in healthy tissue. The author agrees with IWANOWSKI as to the probable interpretation of the foreign elements, namely, "that the minute granules are very small bacteria, carriers of the virus, and further that the irregularly shaped corpuscles must be considered as a pathological product of reaction of the virus carrier on the cell plasm." This causal organism is thought to be a species of *Strongyloplasma*, and is named *S. Iwanowski* in honor of its original discoverer. —J. M. C.

Effect of age on plant structure.—Miss TELLEFSEN[18] has studied the effect of age upon certain tissues of *Salix nigra*. This species was chosen chiefly because of the comparative ease with which specialized tissues, as roots, will develop from the meristematic tissue of cuttings under laboratory conditions. Numerous tables of measurements are given, and some of the conclusions are as follows. Cuttings from younger trees rooted in less time than those from older trees, and also leaves appeared earlier. Epidermal and cortical cells of the root become smaller as the parent tree becomes older, and xylem and meristematic become larger. The average area of vein islets in leaves from older trees is smaller than average vein islet areas of leaves from younger trees, the amount of vascular tissue increasing with senility, thus reducing the average area of vein islets.—J. M. C.

Leaf-skin theory.—Miss SAUNDERS[19] has reached the conclusion that the surface tissue of the seed plant shoot is of foliar origin, meaning that the leaves are decurrent, not merely those that are usually called so, but all leaves. In the same way the superficial tissue of the hypocotyl are derived from the cotyledons. This so-called leaf-skin is formed by the "downward growth and extension of the leaf primordium, which keeps pace with the extension of the central axis with which it is fused. In the case of flowering stems the leaf-skin is formed by the bracts (when present) and the outermost sepals." Miss SAUNDERS has gone into many details as to the extension of a single leaf surface in relation to the different types of phyllotaxy, the various surface patterns developed, and other features.—J. M. C.

Intrafascicular cambium in monocotyledons.—Mrs. ARBER,[20] in continuing her investigations of the occurrence of intrafascicular cambium in monocotyledons, has added Alismaceae, Aponogetonaceae, and Hydrocharitaceae to the list of monocotyledonous families, in some member of which this tissue has been observed, bringing the number of such families to twenty-two. Incidentally, she shows that LIGNIER was probably mistaken in attributing only phloem-forming activity to the cambium in the petiolar bundle of *Arum maculatum*, since she finds secondary xylem in the corresponding bundles of a closely related species (*A. italicum*), and LIGNIER'S figures indicate that the same process takes place in *A. maculatum*.—J. M. C.

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[18] TELLEFSEN, MARJORIE A., The relation of age to size in certain root cells and vein islets of the leaves of *Salix nigra* Marsh. Amer. Jour. Bot. **9**:121–139. 1922.

[19] SAUNDERS, EDITH R., The leaf-skin theory of the stem: a consideration of certain anatomico-physiological relations in the Spermatophyte shoot. Ann. Botany **36**:135–165. *figs. 34.* 1922.

[20] ARBER, AGNES, Studies on intrafascicular cambium in monocotyledons. V. Ann. Botany **36**:251–256. *figs. 8.* 1922.

Heat of inversion.—A careful measurement of the heat of inversion of sucrose by invertase has been made by DIXON and BALL,[21] who used a thermocouple differential calorimeter in vacuum flasks for the determination. Their results confirm the value found by BROWN and PICKERING many years ago, the mean of all results being 3.83 calories for each gram molecule of sugar inverted. The method is more accurate than the heat of combustion determinations of this value.—C. A. SHULL.

Fungus in Pellia.—RIDLER[22] has described the life history of a fungus occurring in a definite zone in the thallus of *Pellia epiphylla*. It was found to occur in the cells of the sporophyte, from which it was isolated, and identified as a species of *Phoma*. The fungus kills the protoplasts of the infected cells of the gametophyte, which ultimately become brown. The effect on the sporophyte is twofold: the contents of the cells are killed, and the cell walls are also wholly or partially absorbed.—J. M. C.

Mycorhiza of conifers.—MCDOUGALL[23] has identified two mycorhizal fungi from the roots of *Picea rubra* as belonging to the genus *Cortinarius*, and described a tubercle-like mycorhiza of *Pinus Strobus*. He reiterates his opinion that these ectotrophic mycorhizal fungi are of no benefit to the trees concerned, and probably do them no great harm, although truly parasitic in their relationship.—G. D. FULLER.

Rocky Mountain flora.—RYDBERG[24] has continued his studies of the montane regions of the southern Rockies, already noted in this journal,[25] by investigating the aquatic and grassland associations, as well as the flora of the sand hills, dry ridges, and rock slides. The plants of these habitats are listed as eastern, western, and endemic.—GEO. D. FULLER.

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[21] DIXON, H. H., and BALL, NIGEL G., A determination by means of a differential calorimeter of the heat produced during the inversion of sucrose. Notes Bot. School, Trinity Coll., Dublin **3**:121–132. 1922.

[22] RIDLER, W. F. F., The fungus present in *Pellia epiphylla* (L.) Corda. Ann. Botany **36**:193–207. *figs. 8*. 1922.

[23] MCDOUGALL, W. B., Mycorhizas of coniferous trees. Jour. Forestry **20**:255–260. *figs. 3*. 1922.

[24] RYDBERG, P. A., Phytogeographical notes on the Rocky Mountain region. X. Grasslands and other open formations of the montane zone of the southern Rockies. Bull. Torr. Bot. Club **48**:315–327. 1921.

[25] BOT. GAZ. **71**:336. 1921.